MAY 07 2007
PATENT & TRADEMARK OFFICE

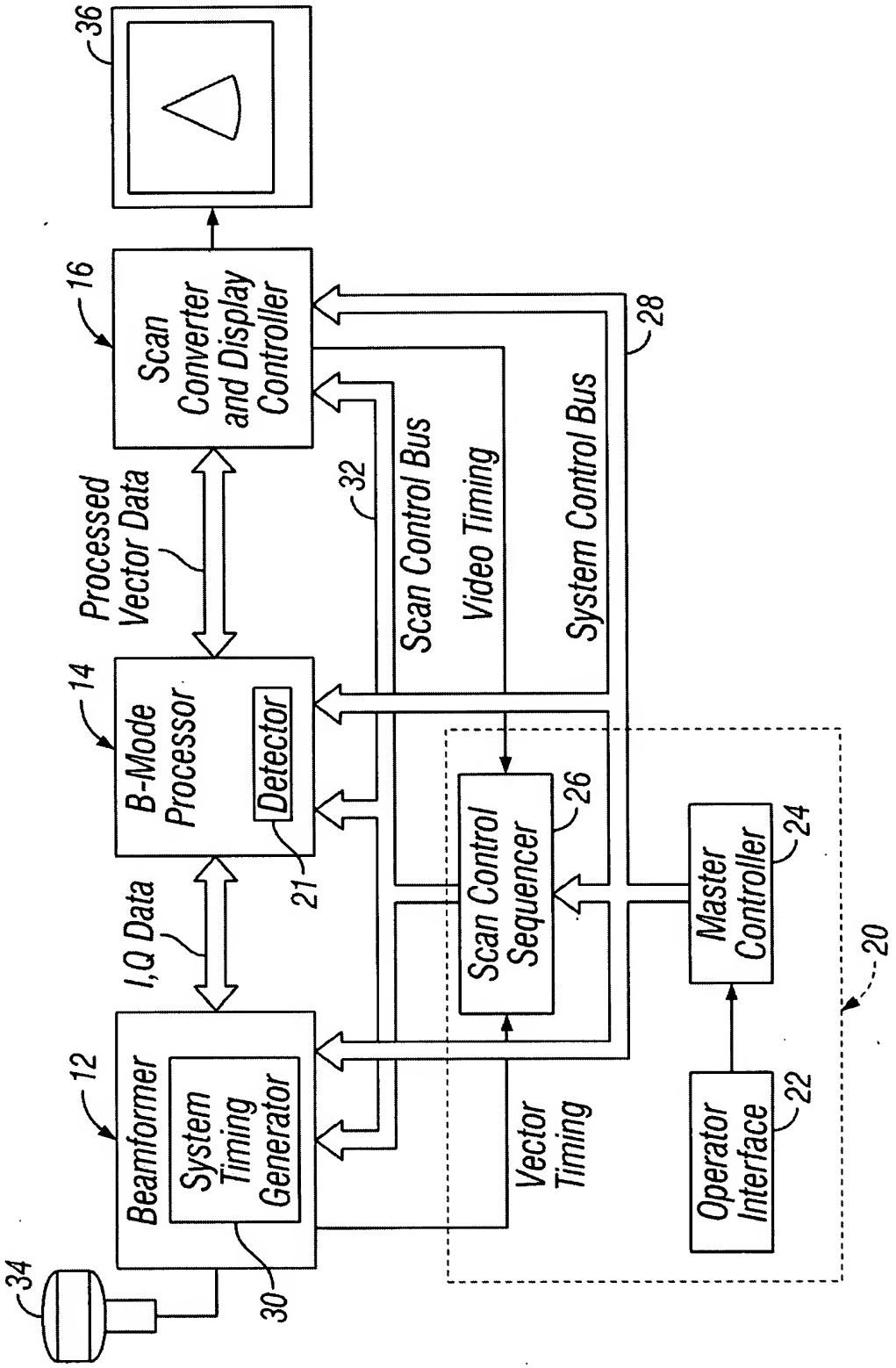


FIG. 1

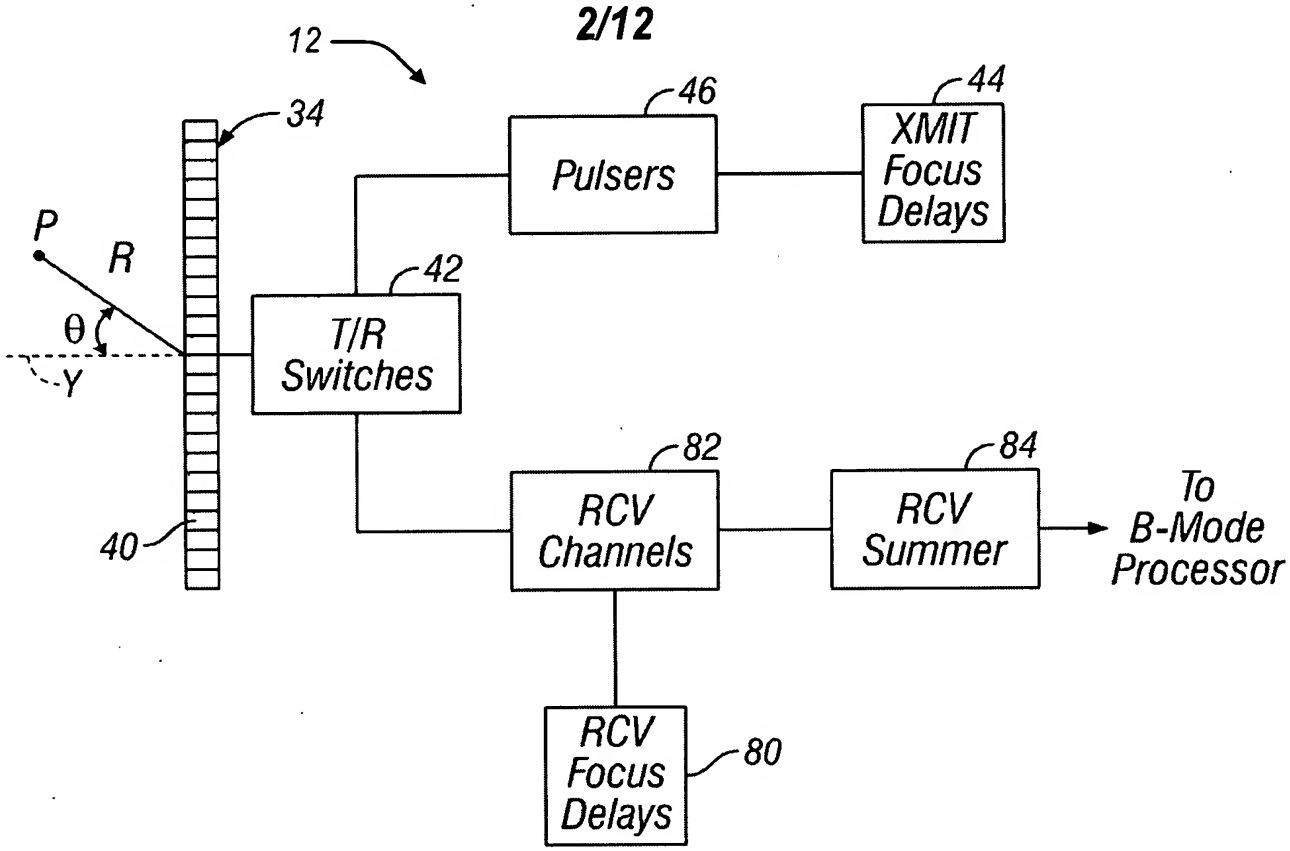
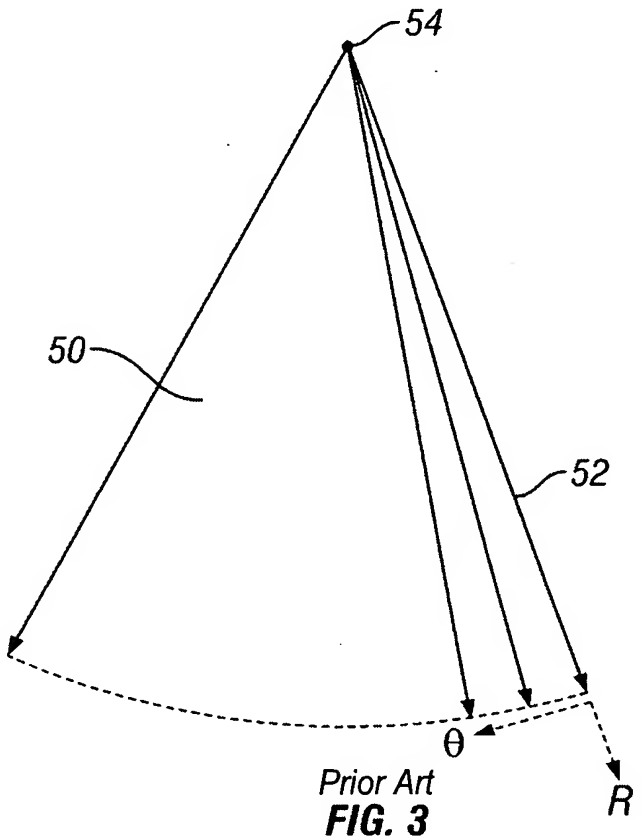
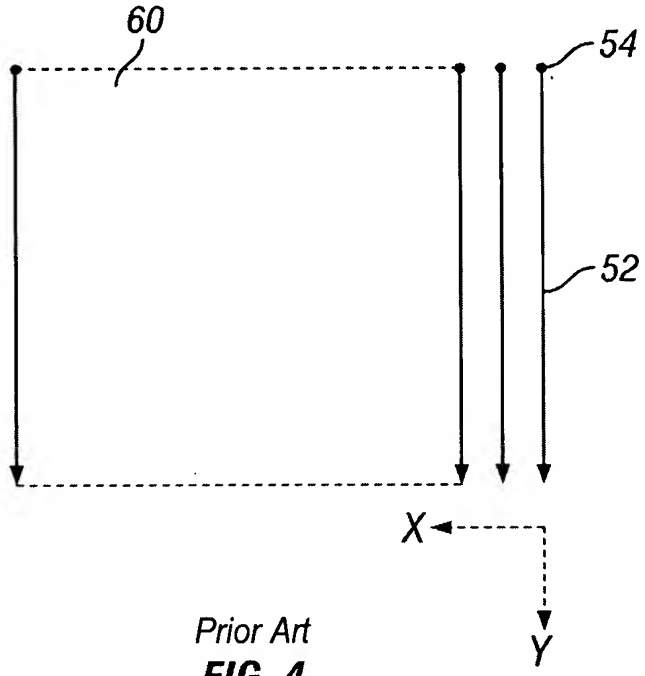


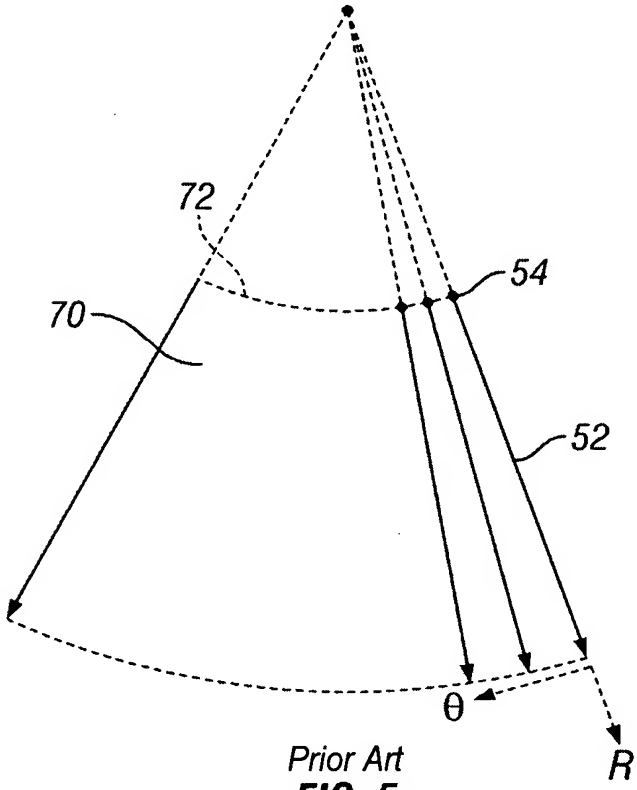
FIG. 2 Prior Art



Prior Art
FIG. 3



Prior Art
FIG. 4



Prior Art
FIG. 5

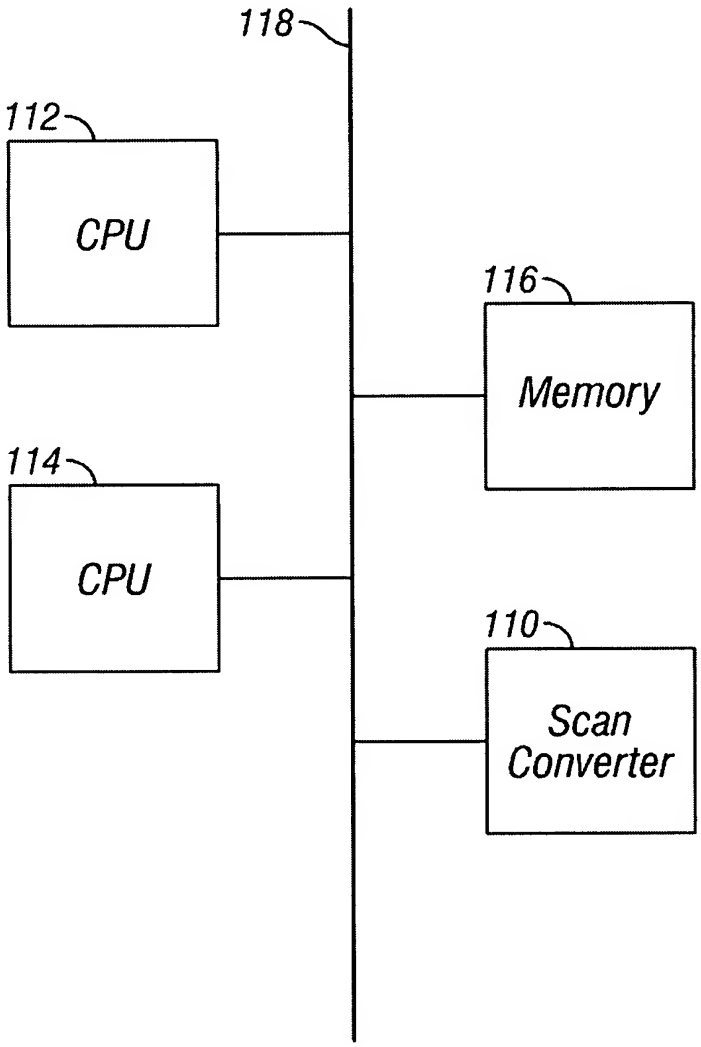


FIG. 6

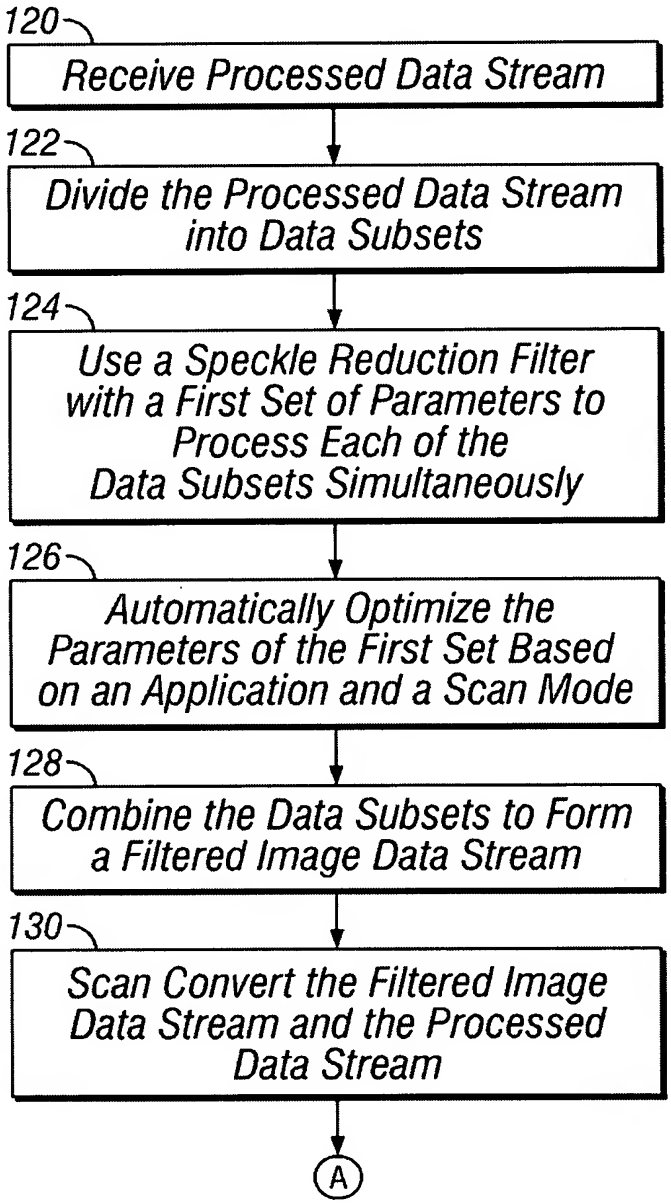

120
Receive Processed Data Stream
122
Divide the Processed Data Stream into Data Subsets
124
Use a Speckle Reduction Filter with a First Set of Parameters to Process Each of the Data Subsets Simultaneously
126
Automatically Optimize the Parameters of the First Set Based on an Application and a Scan Mode
128
Combine the Data Subsets to Form a Filtered Image Data Stream
130
Scan Convert the Filtered Image Data Stream and the Processed Data Stream
A

FIG. 7

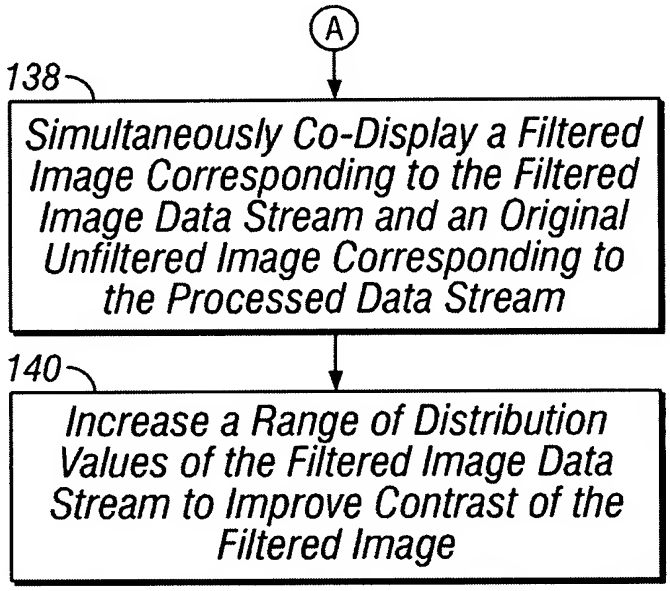

A
138
Simultaneously Co-Display a Filtered Image Corresponding to the Filtered Image Data Stream and an Original Unfiltered Image Corresponding to the Processed Data Stream
140
Increase a Range of Distribution Values of the Filtered Image Data Stream to Improve Contrast of the Filtered Image

FIG. 8

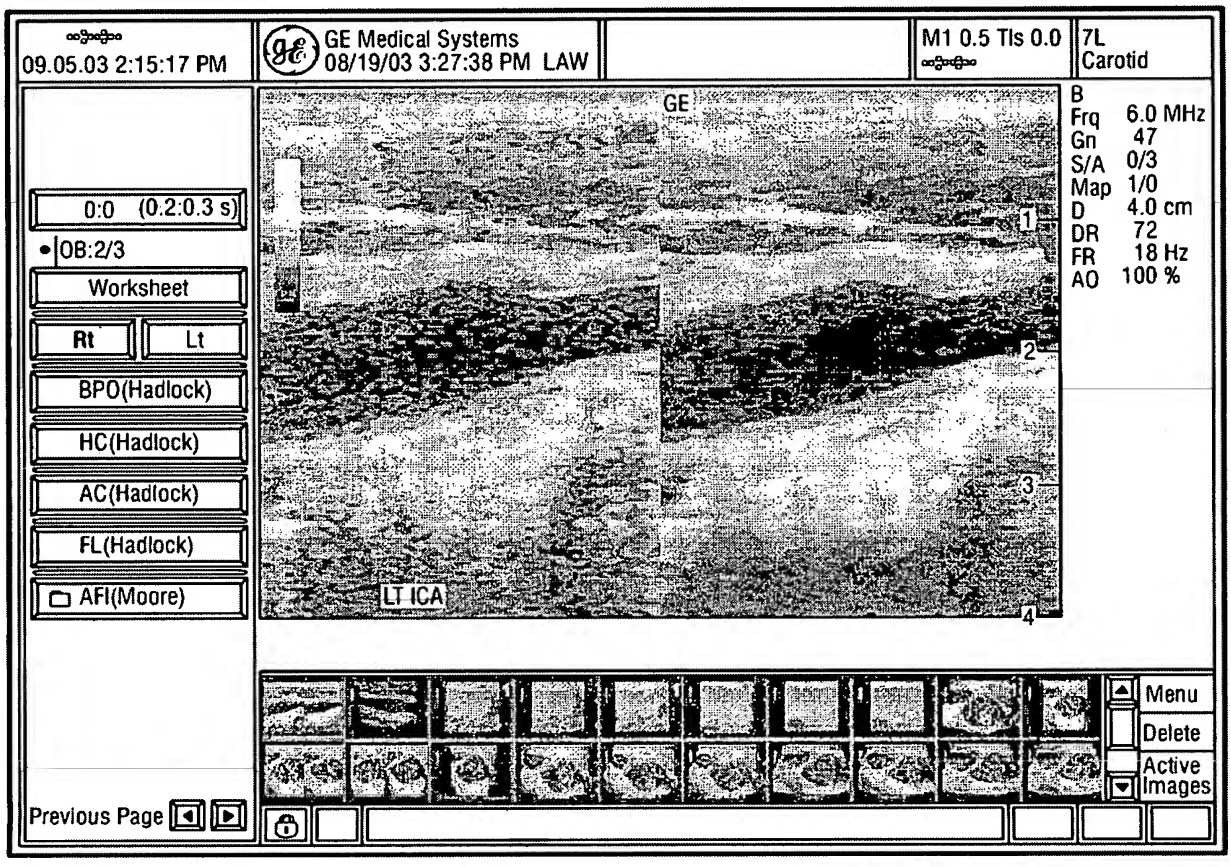

09.05.03 2:15:17 PM
GE Medical Systems
08/19/03 3:27:38 PM LAW
M1 0.5 Tls 0.0
7L
Carotid
B
Frq 6.0 MHz
Gn 47
S/A 0/3
Map 1/0
D 4.0 cm
DR 72
FR 18 Hz
AO 100 %
GE
LT ICA
0:0 (0.2:0.3 s)
OB:2/3
Worksheet
Rt
Lt
BPO(Hadlock)
HC(Hadlock)
AC(Hadlock)
FL(Hadlock)
AFI(Moore)
Previous Page
Menu
Delete
Active Images

FIG. 9

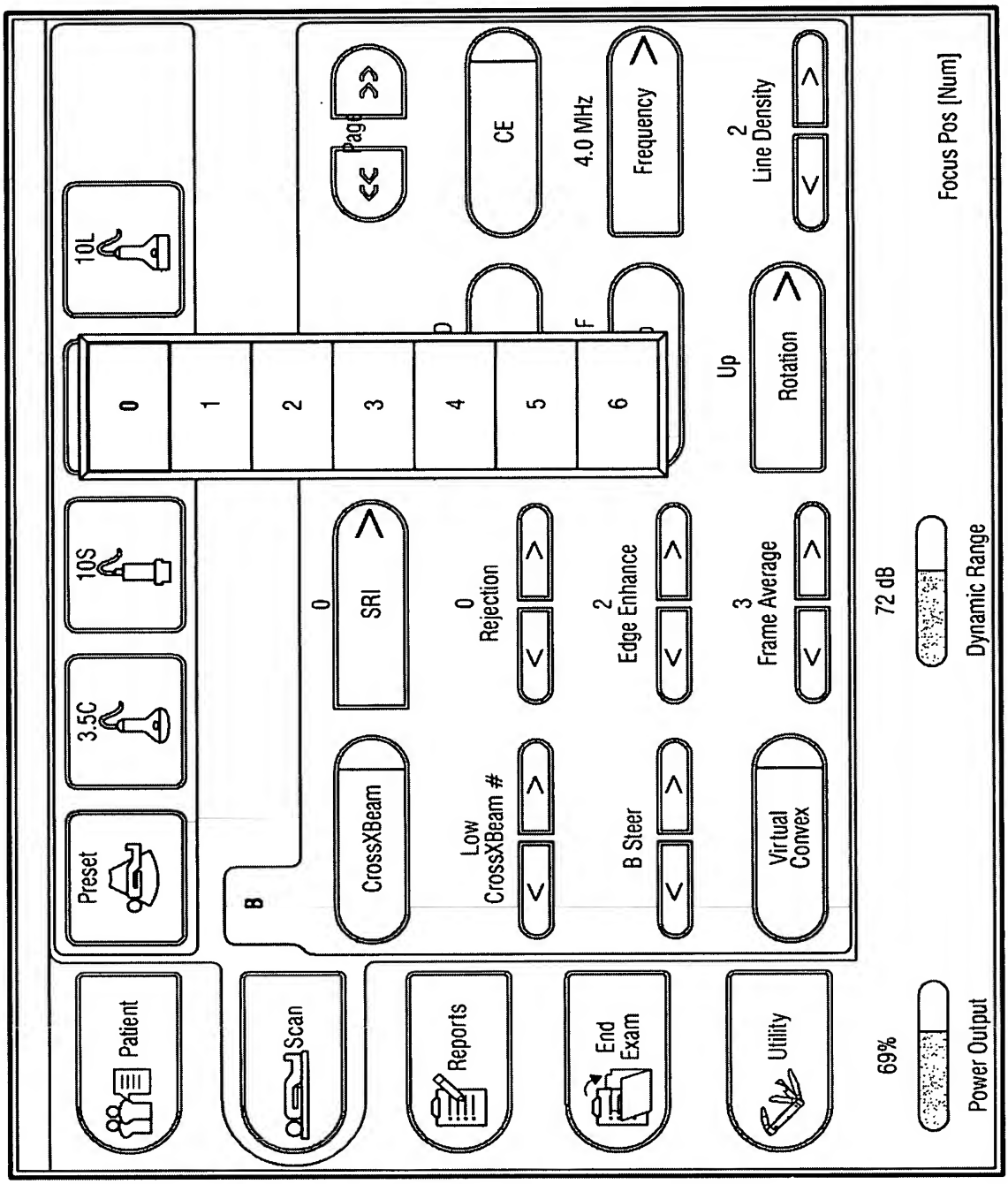

Patient
Preset
3.5C
10S
10L
Scan
B
CrossXBeam
SRI
0
Low CrossXBeam #
0 Rejection
B Steer
2 Edge Enhance
Virtual Convex
3 Frame Average
Up
Rotation
2 Line Density
Page
CE
4.0 MHz
Frequency
0
1
2
3
4
5
6
Reports
End Exam
Utility
69%
Power Output
72 dB
Dynamic Range
Focus Pos [Num]

FIG. 10

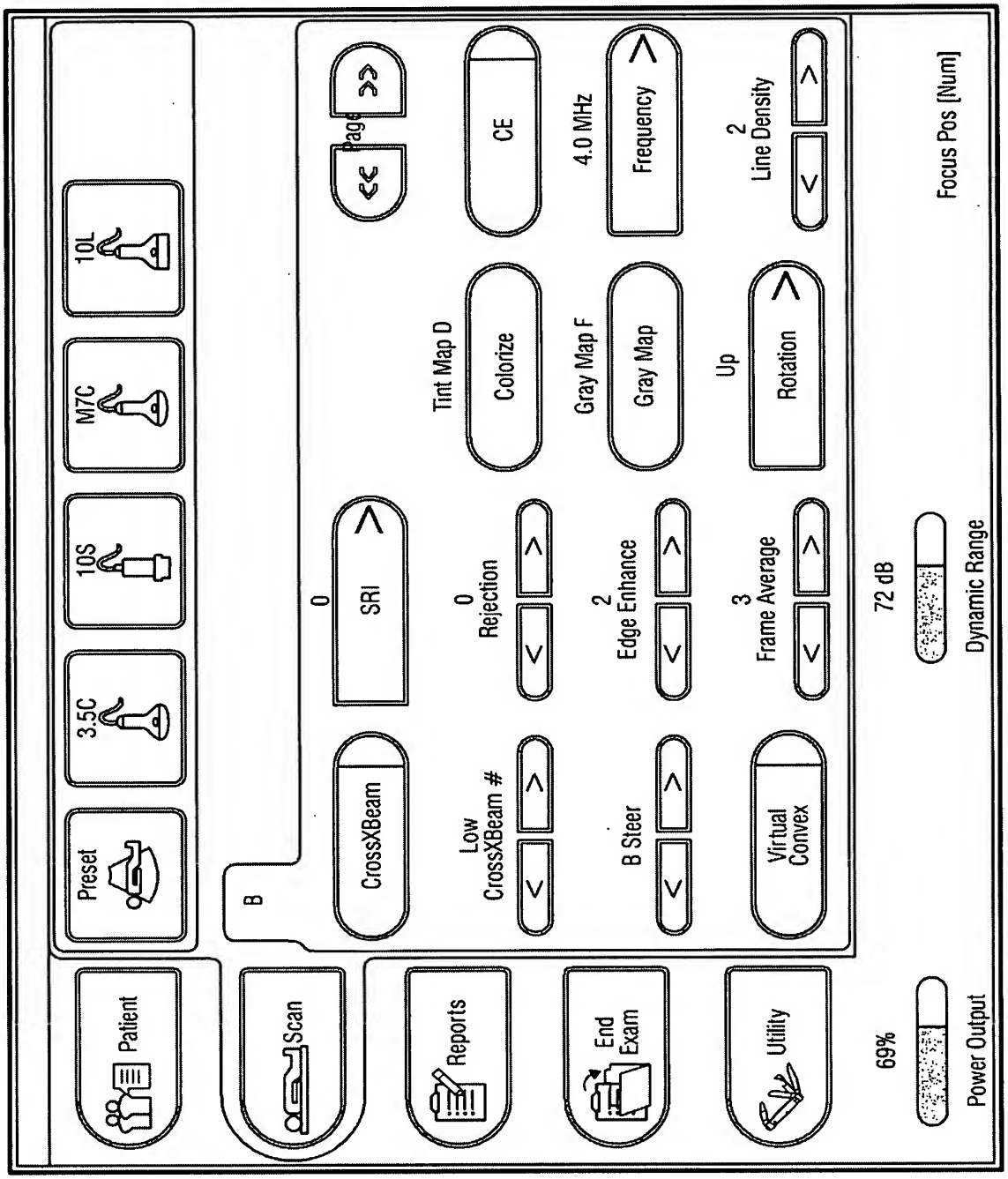

Patient
Preset
3.5C
10S
M7C
10L
Scan
B
CrossXBeam
0
SRI
Page
Low CrossXBeam #
0 Rejection
Tint Map D
Colorize
CE
Reports
B Steer
2 Edge Enhance
Gray Map F
Gray Map
4.0 MHz
Frequency
End Exam
Virtual Convex
3 Frame Average
Up
Rotation
2 Line Density
Utility
69%
Power Output
72 dB
Dynamic Range
Focus Pos [Num]

FIG. 11

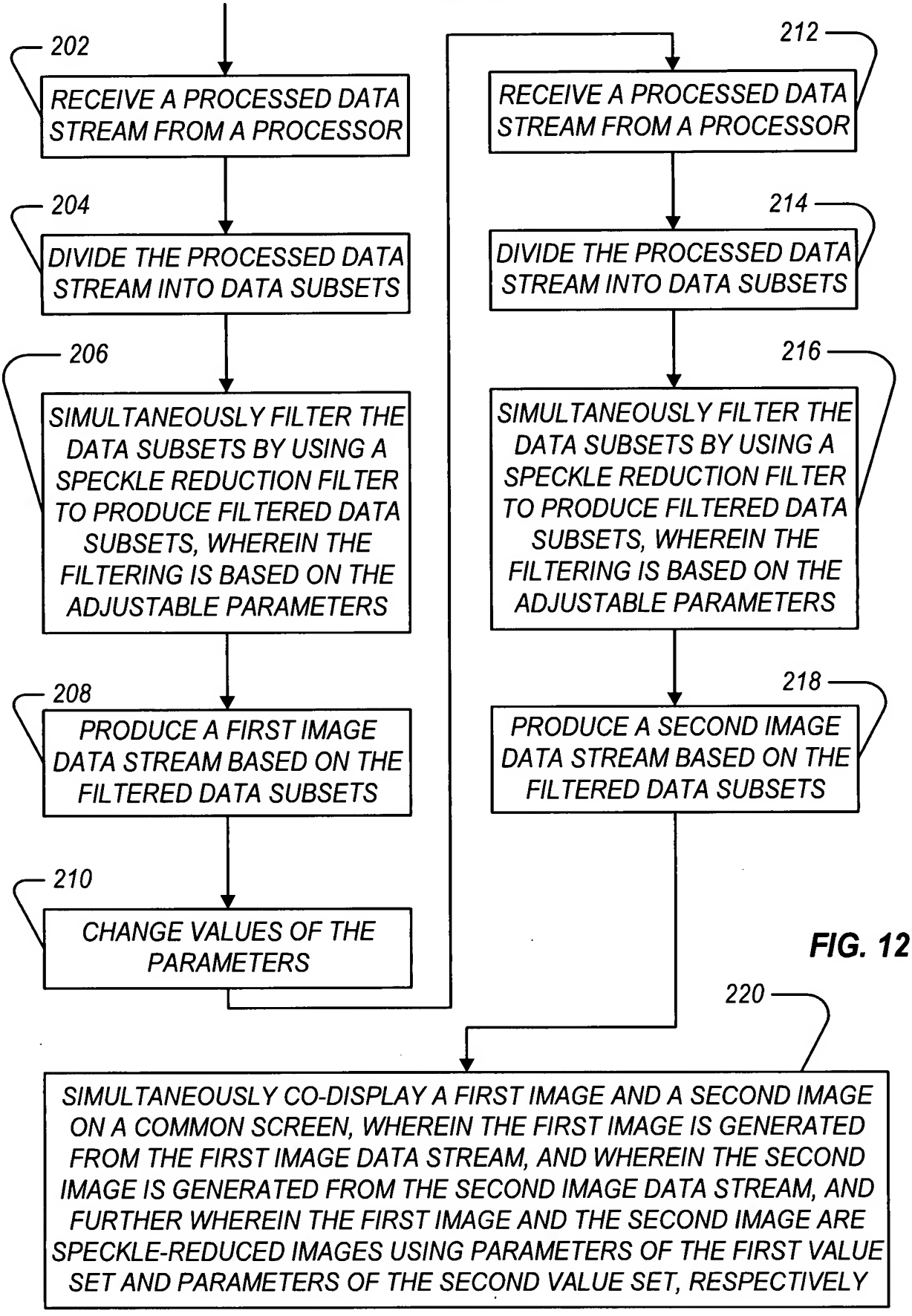

202
RECEIVE A PROCESSED DATA STREAM FROM A PROCESSOR
204
DIVIDE THE PROCESSED DATA STREAM INTO DATA SUBSETS
206
SIMULTANEOUSLY FILTER THE DATA SUBSETS BY USING A SPECKLE REDUCTION FILTER TO PRODUCE FILTERED DATA SUBSETS, WHEREIN THE FILTERING IS BASED ON THE ADJUSTABLE PARAMETERS
208
PRODUCE A FIRST IMAGE DATA STREAM BASED ON THE FILTERED DATA SUBSETS
210
CHANGE VALUES OF THE PARAMETERS
212
RECEIVE A PROCESSED DATA STREAM FROM A PROCESSOR
214
DIVIDE THE PROCESSED DATA STREAM INTO DATA SUBSETS
216
SIMULTANEOUSLY FILTER THE DATA SUBSETS BY USING A SPECKLE REDUCTION FILTER TO PRODUCE FILTERED DATA SUBSETS, WHEREIN THE FILTERING IS BASED ON THE ADJUSTABLE PARAMETERS
218
PRODUCE A SECOND IMAGE DATA STREAM BASED ON THE FILTERED DATA SUBSETS
220
SIMULTANEOUSLY CO-DISPLAY A FIRST IMAGE AND A SECOND IMAGE ON A COMMON SCREEN, WHEREIN THE FIRST IMAGE IS GENERATED FROM THE FIRST IMAGE DATA STREAM, AND WHEREIN THE SECOND IMAGE IS GENERATED FROM THE SECOND IMAGE DATA STREAM, AND FURTHER WHEREIN THE FIRST IMAGE AND THE SECOND IMAGE ARE SPECKLE-REDUCED IMAGES USING PARAMETERS OF THE FIRST VALUE SET AND PARAMETERS OF THE SECOND VALUE SET, RESPECTIVELY

FIG. 12

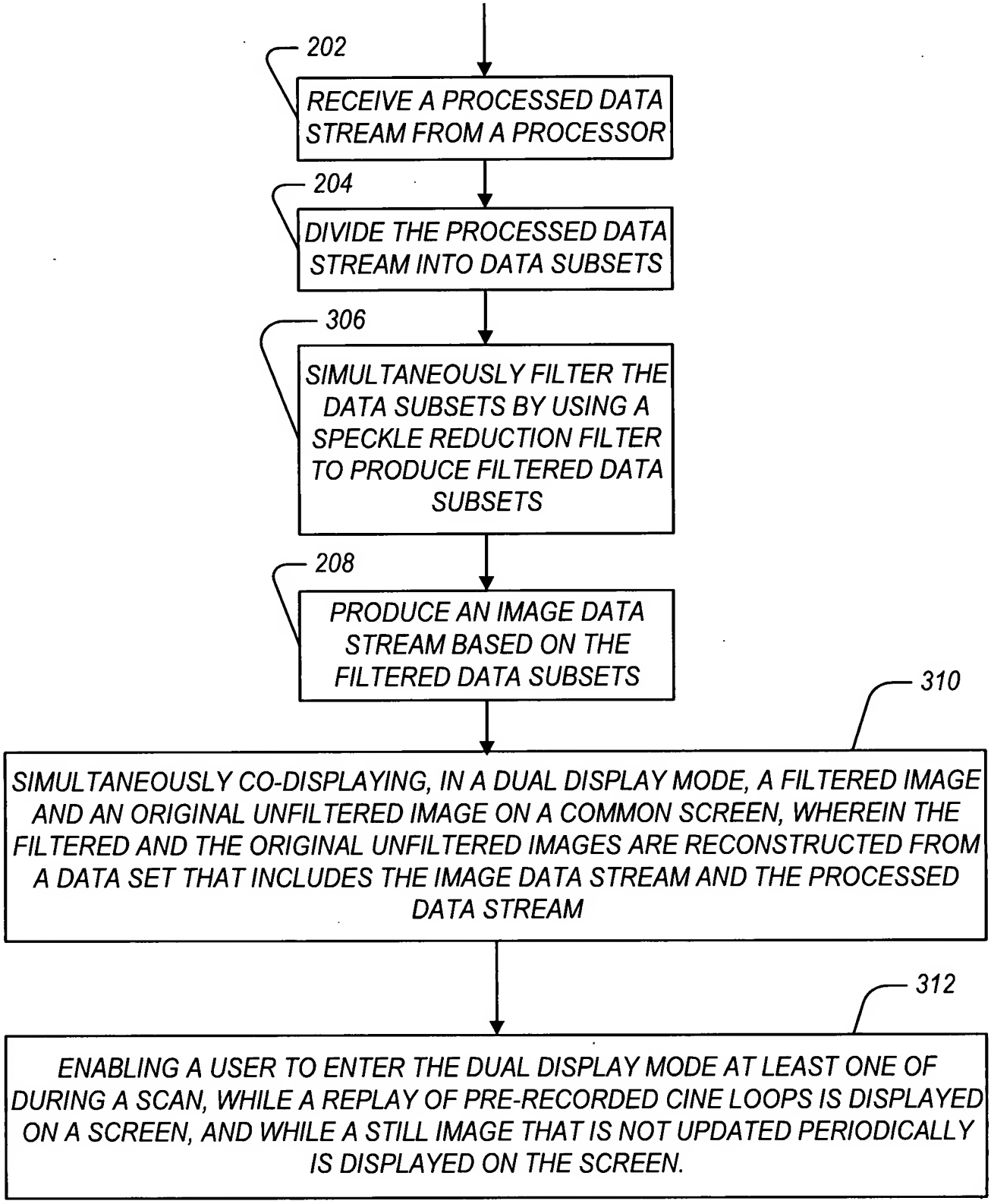

202
RECEIVE A PROCESSED DATA STREAM FROM A PROCESSOR
204
DIVIDE THE PROCESSED DATA STREAM INTO DATA SUBSETS
306
SIMULTANEOUSLY FILTER THE DATA SUBSETS BY USING A SPECKLE REDUCTION FILTER TO PRODUCE FILTERED DATA SUBSETS
208
PRODUCE AN IMAGE DATA STREAM BASED ON THE FILTERED DATA SUBSETS
310
SIMULTANEOUSLY CO-DISPLAYING, IN A DUAL DISPLAY MODE, A FILTERED IMAGE AND AN ORIGINAL UNFILTERED IMAGE ON A COMMON SCREEN, WHEREIN THE FILTERED AND THE ORIGINAL UNFILTERED IMAGES ARE RECONSTRUCTED FROM A DATA SET THAT INCLUDES THE IMAGE DATA STREAM AND THE PROCESSED DATA STREAM
312
ENABLING A USER TO ENTER THE DUAL DISPLAY MODE AT LEAST ONE OF DURING A SCAN, WHILE A REPLAY OF PRE-RECORDED CINE LOOPS IS DISPLAYED ON A SCREEN, AND WHILE A STILL IMAGE THAT IS NOT UPDATED PERIODICALLY IS DISPLAYED ON THE SCREEN.

FIG. 13

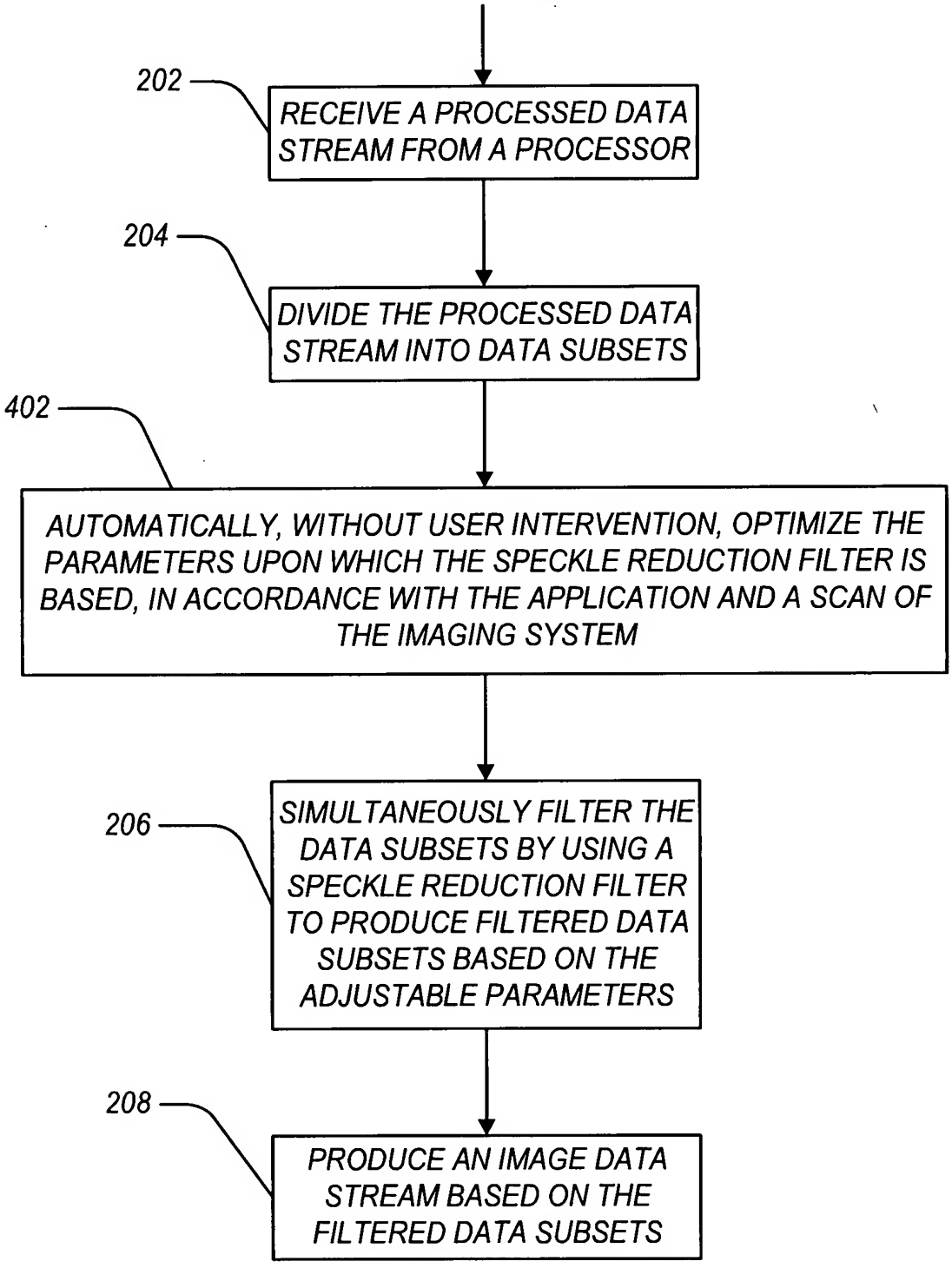

202
RECEIVE A PROCESSED DATA STREAM FROM A PROCESSOR
204
DIVIDE THE PROCESSED DATA STREAM INTO DATA SUBSETS
402
AUTOMATICALLY, WITHOUT USER INTERVENTION, OPTIMIZE THE PARAMETERS UPON WHICH THE SPECKLE REDUCTION FILTER IS BASED, IN ACCORDANCE WITH THE APPLICATION AND A SCAN OF THE IMAGING SYSTEM
206
SIMULTANEOUSLY FILTER THE DATA SUBSETS BY USING A SPECKLE REDUCTION FILTER TO PRODUCE FILTERED DATA SUBSETS BASED ON THE ADJUSTABLE PARAMETERS
208
PRODUCE AN IMAGE DATA STREAM BASED ON THE FILTERED DATA SUBSETS

FIG. 14

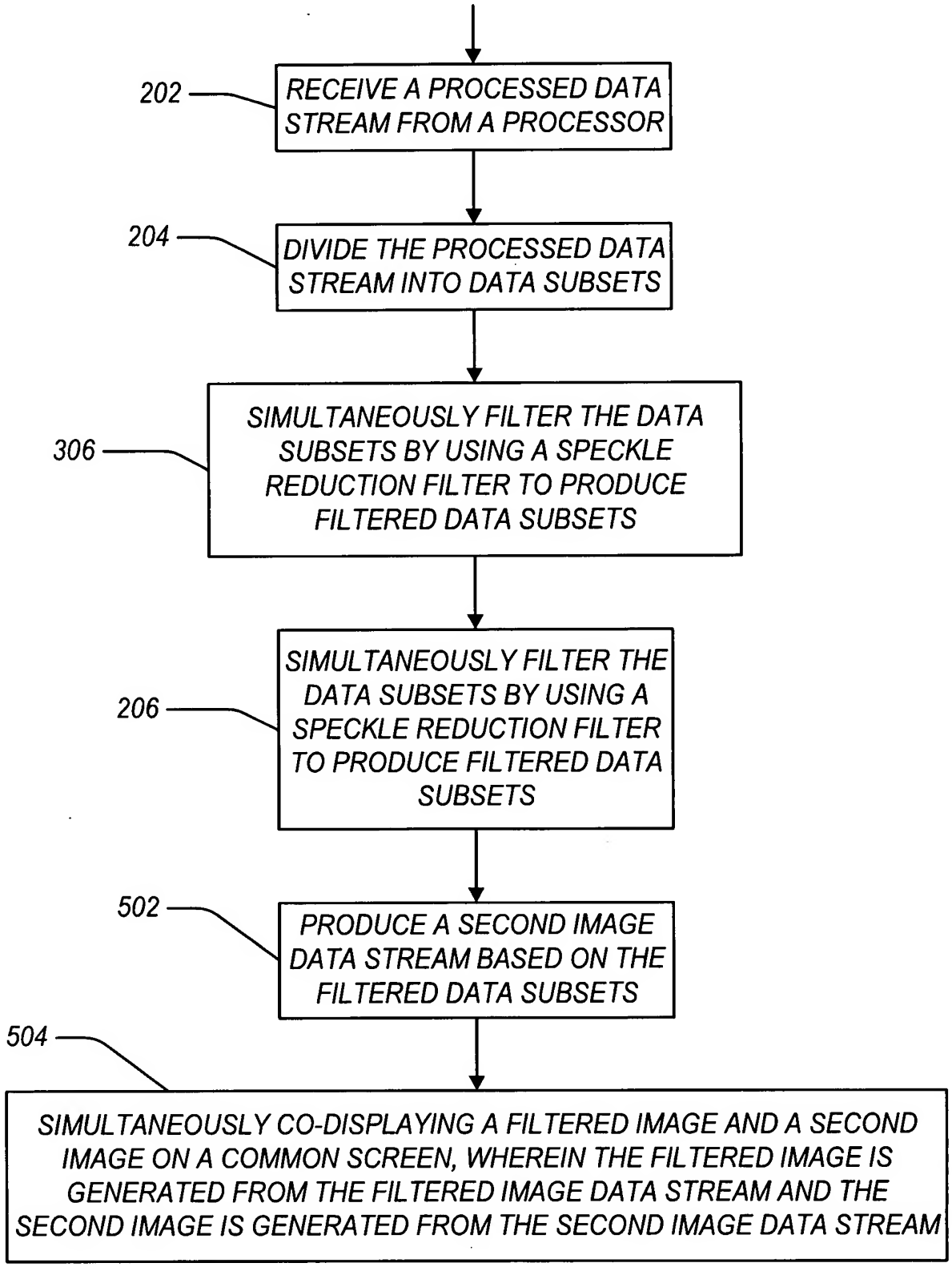

202
RECEIVE A PROCESSED DATA STREAM FROM A PROCESSOR
204
DIVIDE THE PROCESSED DATA STREAM INTO DATA SUBSETS
306
SIMULTANEOUSLY FILTER THE DATA SUBSETS BY USING A SPECKLE REDUCTION FILTER TO PRODUCE FILTERED DATA SUBSETS
206
SIMULTANEOUSLY FILTER THE DATA SUBSETS BY USING A SPECKLE REDUCTION FILTER TO PRODUCE FILTERED DATA SUBSETS
502
PRODUCE A SECOND IMAGE DATA STREAM BASED ON THE FILTERED DATA SUBSETS
504
SIMULTANEOUSLY CO-DISPLAYING A FILTERED IMAGE AND A SECOND IMAGE ON A COMMON SCREEN, WHEREIN THE FILTERED IMAGE IS GENERATED FROM THE FILTERED IMAGE DATA STREAM AND THE SECOND IMAGE IS GENERATED FROM THE SECOND IMAGE DATA STREAM

FIG. 15